33. A method according to claim 31 wherein said skin-related process is a non-malignant skin disorder.

34. A method according to claim 31 wherein said skin-related process is the development of benign tumors.

A' cont'd

35. A method according to claim 33 wherein said non-malignant skin disorder is selected from aging, wrinkling, acne, keratinization, differentiation, proliferation disorders.

36. A method for *in vivo* modulation of malignant cell development in a subject, said method comprising administering to said subject an effective amount of 9-*cis*-retinoic acid.

37. A method according to claim 36, further comprising administering a potentiating, effective amount of interferon-α along with said 9-*cis*-retinoic acid.

38. A method according to claim 36 wherein said malignant cell development is selected from testicular cancer, lung cancer or acute promyelocytic leukemia.

39. A method according to claim 36 wherein said malignant cell development is skin cancer.

40. A method according to claim 36 comprising preventing the development of malignant epithelial tumors.

41. A method for *in vitro* modulation of cellular differentiation, said method comprising contacting said cells with an effective amount of 9-*cis*-retinoic acid.

42. A method according to claim 41 wherein said cells are selected from mouse teratocarcinoma cells (F9 cells), human epidermal keratinocytes or human promyelocytic leukemia cells.

43. A method for *in vitro* modulation of cellular proliferation, said method comprising contacting said cells with an effective amount of 9-*cis*-retinoic acid.

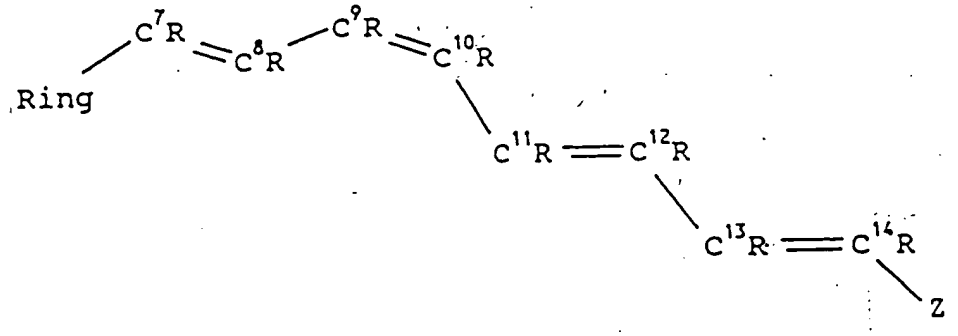
A' cont'd

44. A method according to claim 43 wherein said cells are melanoma cells.

45. A method for *in vitro* modulation of cellular retinol binding protein, said method comprising contacting said cells with an effective amount of 9-*cis*-retinoic acid.

46. A method for *in vitro* modulation of limb morphogenesis, said method comprising contacting said cells with an effective amount of 9-*cis*-retinoic acid.

47. Compounds according to the following formula:



Structure A

wherein:

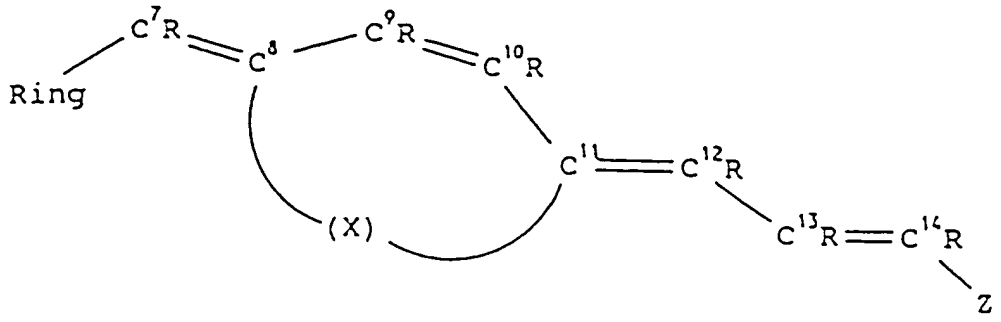
unsaturation between carbon atoms C^9 and C^{10} has a cis configuration, and one or both sites of unsaturation between carbon atoms C^{11} through C^{14} optionally have a cis configuration;

"Ring" is a cyclic moiety, optionally having one or more substituents thereon;

Z is selected from carboxyl (-COOH), carboxaldehyde (-COH), hydroxyalkyl [$-(CR'_2)_n-OH$, wherein each R' is independently selected from hydrogen or a lower alkyl and n falls in the range of 1 up to about 4], thioalkyl [$-(CR'_2)_n-SH$, wherein R' and n are as defined above], hydroxyalkyl phosphate [$-(CR'_2)_n-OP(OM)_3$, wherein R' and n are as defined above and M is hydrogen, lower alkyl, or a cationic species such as Na^+, Li^+, K^+, and the like], alkyl ether of a hydroxyalkyl group [$-(CR'_2)_n-OR'$, wherein R' and n are as defined above], alkyl thioether of a thioalkyl group [$-(CR'_2)_n-SR'$, wherein R' and n are as defined above], esters of hydroxyalkyl groups [$-(CR'_2)_n-O-CO-R'$, wherein R' and n are as defined above], thioesters of hydroxyalkyl group [$-(CR'_2)_n-O-CS-R'$, wherein R' and n are as defined above], esters of thioalkyl groups [$-(CR'_2)_n-S-CO-R'$, wherein R' and n are as defined above], thioesters of thioalkyl groups [$-(CR'_2)_n-S-CS-R'$, wherein R' and n are as defined above], aminoalkyl [$-(CR'_2)_n-NR'_2$, wherein R' and n are as defined above], N-acyl aminoalkyl [$-(CR'_2)_n-NR'-CO-R''$, wherein R' and n are as defined above and R" is a lower alkyl or benzyl], carbamate [$-(CR'_2)_n-NR'-CO-OR'$ or $-(CR'_2)_n-O-CO-NR'_2$, wherein R' and n are as defined above]; and

each R is independently selected from H, halogen, alkyl, aryl, hydroxy, thiol, alkoxy, thioalkoxy, amino, or any of the Z substituents, with the proviso that Structure A is not 9-*cis*-retinoic acid; or

any two or more of the R groups can be linked to one another to form one or more ring structures;



A' cont'd

Structure I;

wherein:

"Ring", Z and R are as defined above;

X is $-[(CR_2)_x-X'-(CR_2)_y]-$,

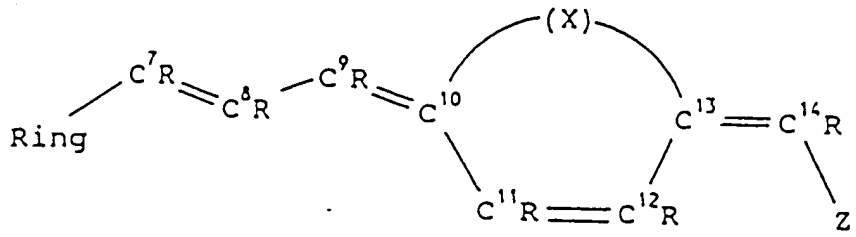
X' is selected from -O-, carbonyl, -S-, -S(O)-, $-S(O)_2-$, thiocarbonyl, -NR"-, or $-CR_2-$,

R" is hydrogen, alkyl, hydroxy, thiol, or alkoxy acyl;

x is 0, 1 or 2,

y is 0, 1, or 2, and

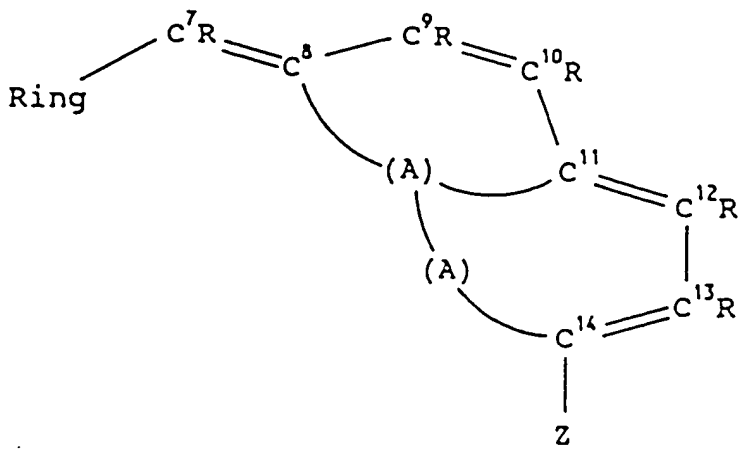
x + y ≤2;



Structure II;

wherein:

X, X', R, R", Z, Ring, x and y are as defined above;

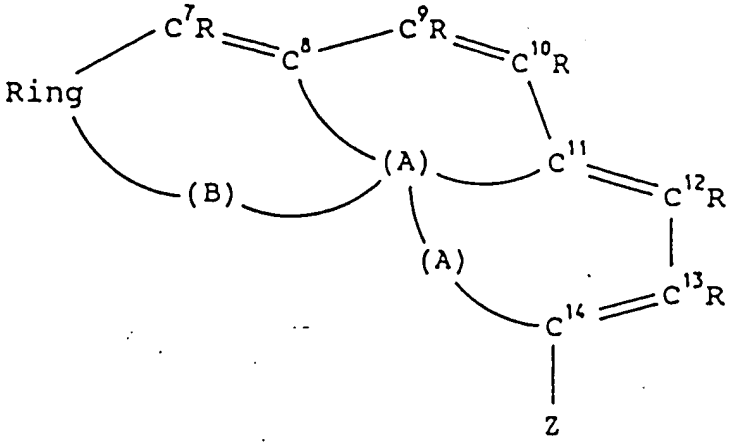


Structure III

wherein:

one A is X and the other A is X', and

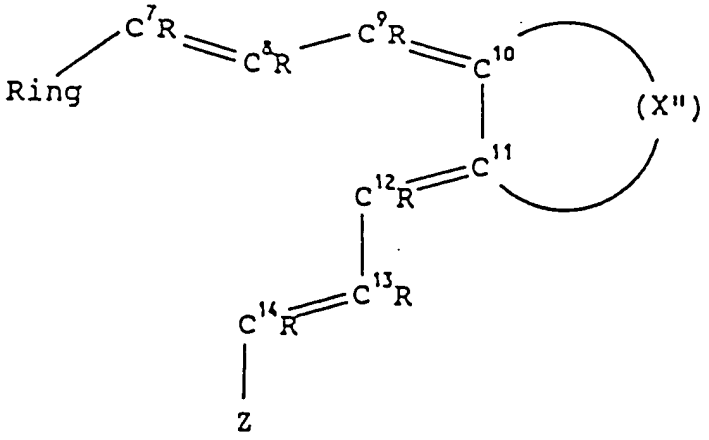
X, X', R, R", Z, Ring, x and y are as defined above;



Structure IV;

wherein:

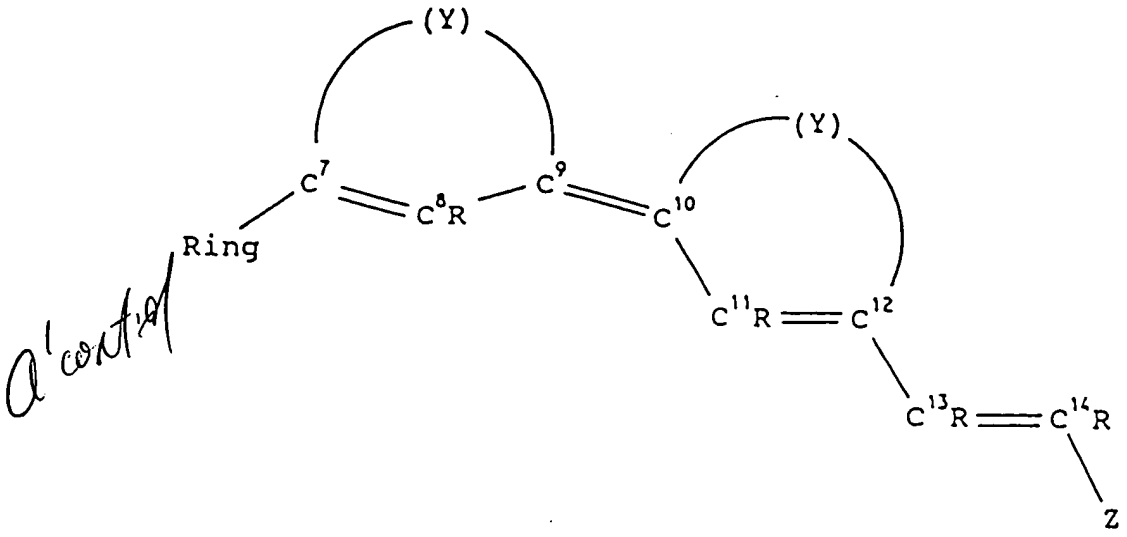
one A is X and the other A is X',
B is X', and
X, X', R, R", Z, Ring, x and y are as defined above;



Structure V;

wherein:

X" is $-[(CR_2)_a-X'-(CR_2)_b]-$,
X', R, R", Ring and Z are as defined above,
a is 0, 1, 2, 3 or 4,
b is 0, 1, 2, 3, or 4, and
a + b is ≥2, but ≤4;



a' cont'd

Structure VI;

wherein:

Y is $-[(CR_2)_c-X'-(CR_2)_d]-$,
X', R, R", Ring and Z are as defined above,
c is 0, 1, 2 or 3,
d is 0, 1, 2 or 3, and
c + d ≥1, but ≤3; and